Profiling the incidents and injuries of part-time and full-time soldiers in the Australian army

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Profiling the Incidents and Injuries of Part-time and Full-time Soldiers in the Australian Army

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Background

- The Australian Army is comprised of both part-time and full-time personnel

(ADF Health Status Report, 2000; Defence White Paper 2013)

- However, unlike full-time regular soldiers, part-time soldiers (or ‘reservists’) typically have primary employment outside the military and only become full-time soldiers when called upon to participate in training exercises and local or international military operations

(Williams, 2005)




Background

- With active service of this nature becoming increasingly more frequent in recent years, these part-time personnel are no longer considered to be ‘back up’ personnel, but rather to be integral to the successful functioning of the full-time forces

(Smith & Jans, 2011)




Background

- With operational deployments increasing, part-time soldiers now contribute to around 10% of Australian and UK forces

(Smith & Jans, 2011;Dandeker et al., 2011)

- In the US, reservists make up approximately half of personnel actually fighting in current conflicts

(Moore & Barnett, 2013)




Background

- Strategically, the ADF Defence White Paper has acknowledged the importance of integrating ARES and ARA personnel under the government approved plan, BEERSHEBA

(Defence White Paper 2013)

- For this reason, the ability of ARES personnel to effectively work and keep pace with their ARA peers, without experiencing excessive numbers of work health and safety incidents or injuries, is vital

(Moore & Barnett, 2013)




Background

- Ultimately, work health and safety incidents and resulting injuries affect both populations

(ADF Health Status Report, 2000; Defence White Paper 2013)

- Despite the importance of this Reserve capability, preliminary research conducted by the ADF in 2000, based on limited data, suggested that part-time ADF personnel were three times more likely to report injuries that had occurred during physical and military training than full-time personnel

(ADF Health Status Report, 2000)




Aim

- To profile the incidents & injuries reported in Part-time compared to Full-time soldiers serving in the Australian Army

This research was supported by a grant from the Defence Health Foundation

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Methods

- Retrospective cohort study, covering 01 Jul 2012 – 30 Jun 2014
- Incident data for ARES & ARA extracted from WHSCAR database by system administrators & made non-identifiable
- Inclusion Criteria:
  - Incident or injury sustained by Part-time or Full-time personnel
  - Incident or injury occurred during 01 July 2012- 30 June 2014
- Exclusion Criteria:
  - Foreign defence service on secondment
  - Missing data




Methods

- Population sizes ascertained from annual Defence Agency Resources & Planned Performance reports
- Total annual numbers of ARES days served provided by AHQ




Methods

- Data analysis:
  - Comparison of the types, source & mechanisms of these incidents
  - Frequency distributions of key incidents
  - Compare Part-time vs. Full-time incidents & injuries
  - Incidence & injury rates Year One vs. Year Two




Methods

- Ethics approval from ADHREC (LERP14-024) & BUHREC (RO1907)
- Abstract approved for presentation by JHC (150707)



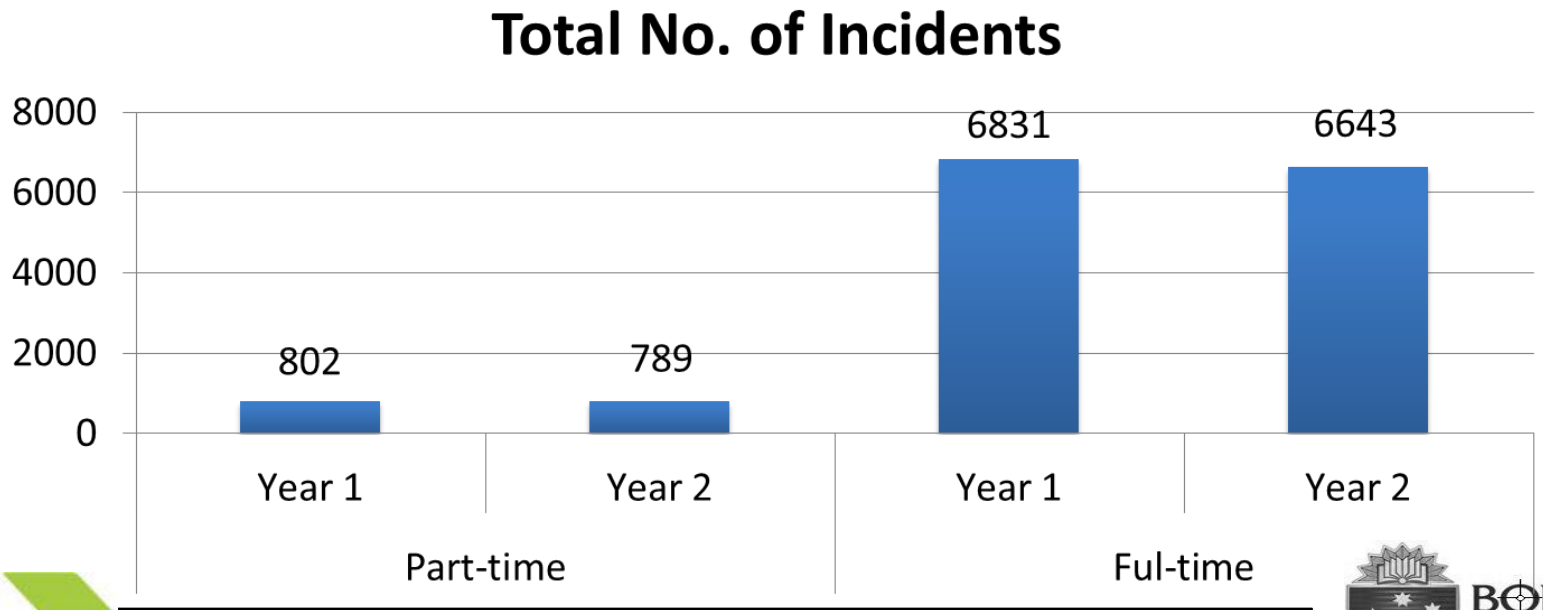

Results

ARES and ARA Population Sizes 2012-2014

	ARES	ARA	Whole of Army
2012 - 2013	14867	28955	43822
2013 - 2014	15200	29847	45047
Mean pop. 2012-14	15034	29401	44435




Results



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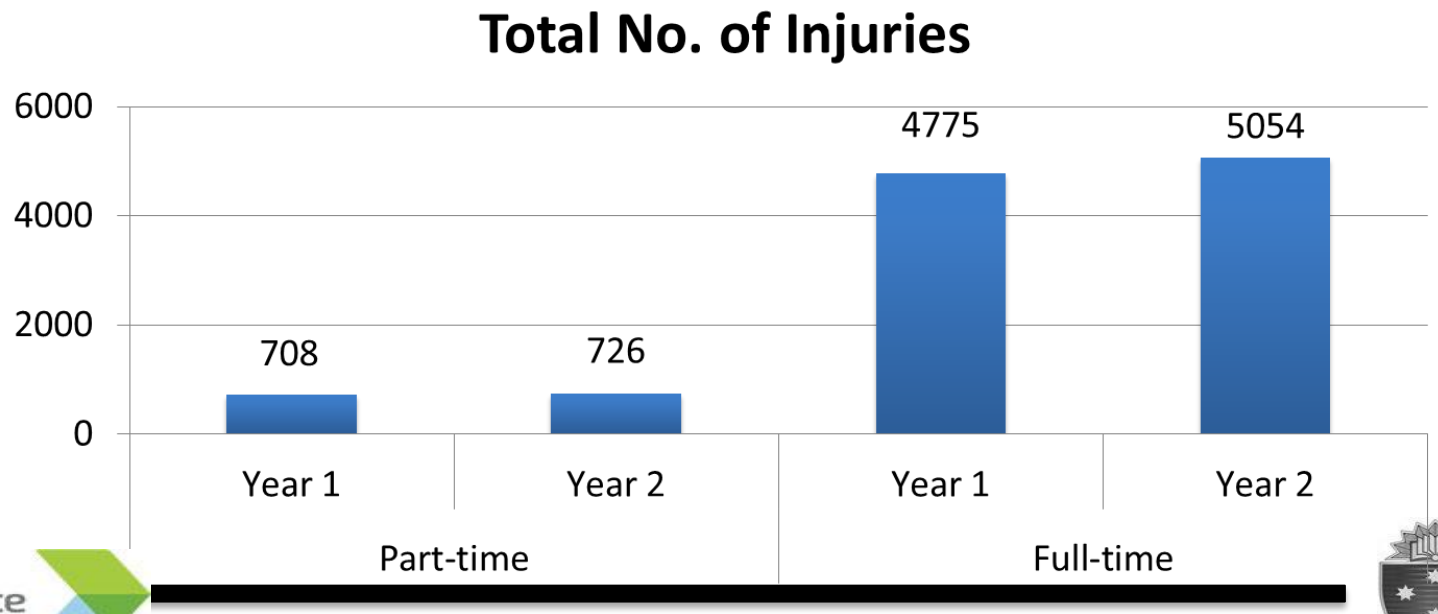
Results



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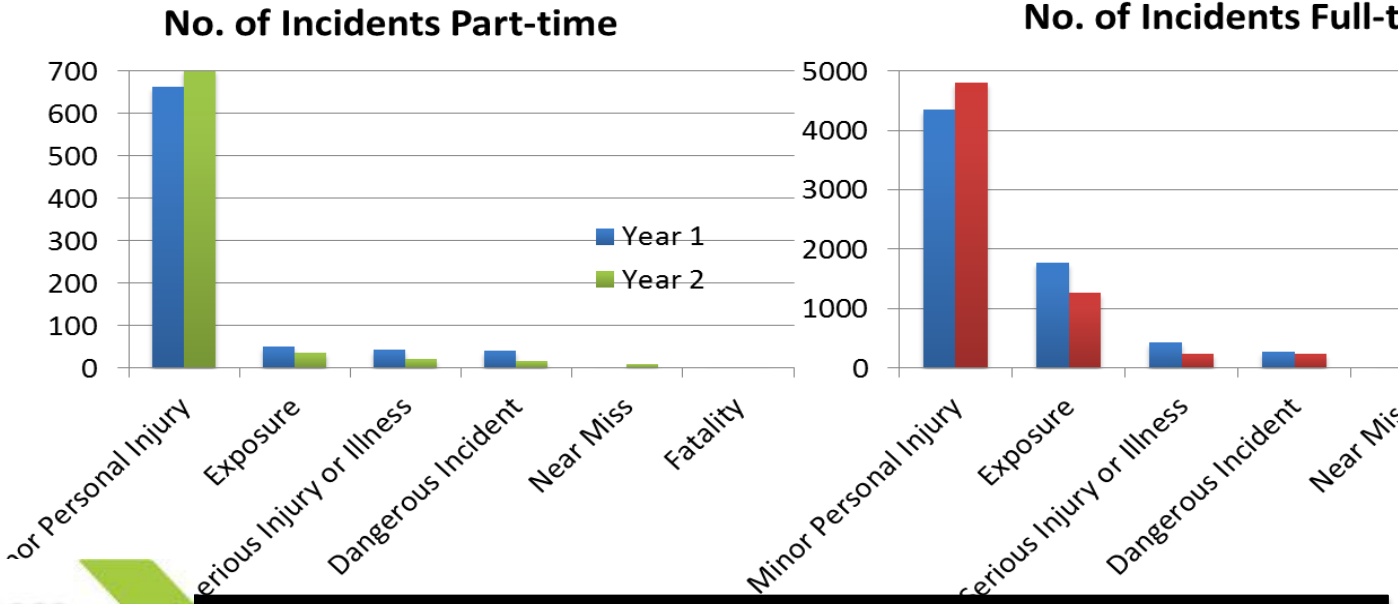
Results - Incidence rates, by year and Service type

Years	ARES	ARA
2012-2013 (1 year)	30.84	16.49
2013-2014 (1 year)	30.19	16.93
2012-2014 (2 years)	30.50	16.72

Injuries per 100 person-years of active service




Results



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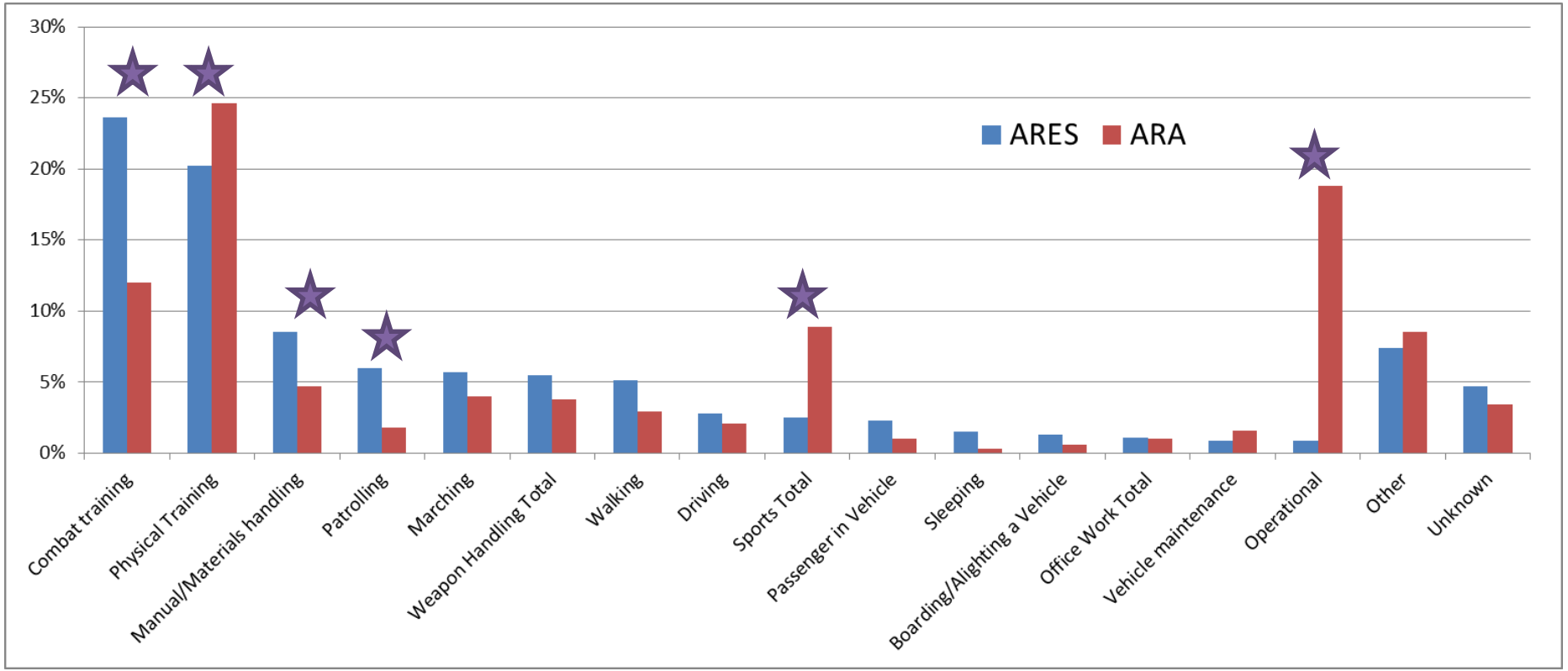
Results - Body locations affected by reported WHS incidents, by Service type

Body location	ARES	ARA	Whole of Army
Lower limb	36.5%	30.8%	31.4%
Trunk and Pelvis	23.4%	21.2%	21.4%
Upper limb	14.6%	9.5%	10.0%
Systemic	10.6%	22.8%	21.5%
Head	8.3%	7.8%	7.9%
Other	6.6%	7.9%	7.8%
Total	100.00%	100.00%	100.00%

Results - Mechanisms of injuries resulting from reported WHS incidents, by Service type

Mechanism of injury	ARES	ARA	Whole of Army
Muscular stress while lifting, carrying or donning equipment	34.8%	31.6%	31.9%
Fall	20.2%	14.9%	15.5%
Contact with moving or stationary object	12.1%	10.3%	10.4%
Chemical substance	5.5%	18.1%	16.8%
Vehicle accident	3.0%	3.3%	3.3%
Insect and spider bites and stings	2.3%	0.5%	0.6%
Contact with, or exposure to, biological factors of unknown origin	2.1%	2.3%	2.3%
Contact with hot objects	1.9%	0.4%	0.5%
Exposure to environmental heat	1.9%	1.6%	1.7%
Rubbing and chafing	1.1%	0.5%	0.6%
Long term exposure to sounds	0.2%	1.6%	1.4%
Other and multiple mechanisms of injury	13.8%	13.8%	13.8%
Unspecified mechanisms of injury	1.1%	1.1%	1.2%
Total	100.0%	100.0%	100.0%

Results - Activities during which reported WHS incidents occurred, by Service type






Discussion

- The lower limbs were the leading body location affected
  - ARES slightly higher than ARA when compared to the regular army population.
  - Lower limbs in particular have been previously found to be the leading body location of injury in military personnel (Knapik et al., 2001; Kaufman et al., 2000)
- Lower limb injuries across Army in this study = 31.4% & the Australian Defence Health Status Report =31.5%




Discussion

- The trunk (ARES =23.4%: ARA 21.2%) next highest
- This result differs from the findings in the Australian Defence Health Status report in 2000 which found the upper limbs to be the next most commonly reported body location of injury in the Australian Defence Force as a whole (21.7%), followed by the trunk (14.8%).




Discussion

- Both groups had similar PT percentages
- Notably higher sporting injuries in ARA (ARES = 2.5%: ARA = 8.9%)
- Combat tasks (inc patrolling) and manual handling were other activities for which differences between the two populations existed. (ARES = 29.6%: ARA = 13.8%)




Concluding remarks

- ARES personnel would benefit from combat task orientated conditioning (e.g. load carriage)
- Based on previous literature, this conditioning should preferably occur on a weekly basis (Orr et al., 2010; Knapick et al., 2012)
- While wearing actual combat loads in public would not be suitable, encouraging and facilitating participation in orienteering, rogaining and hiking clubs may provide a means of providing some load carriage relevant conditioning stimulus




Concluding remarks

- Detailed literature in this area is lacking and an increased focus needs to be placed on the injury prevention, physical conditioning and assessment of ARES personnel if they are to be safely employed at a level commensurate with ARA personnel

Acknowledgement

- The Defence Health Foundation

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